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SCIENCE

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FRIDAY, NOVEMBER 10, 1899.

SCIENTIFIC WORK OF THE LICK OBSERVATORY.*

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INSTRUMENTS AND SCIENTIFIC WORK OF THE OBSERVERS.

THE nature of the scientific work undertaken at the Lick Observatory is determined by such considerations as the unusually fine atmospheric conditions which prevail here, the nature of the instrumental equipment, and the number of observers on the staff. The general policy of the Observatory is to carry on investigations which cannot be pursued to so great advantage elsewhere. Thus, comets which are bright enough to be easily seen at the leading observatories receive only occasional attention, while comets which, by reason of their faintness or unfavorable position, are difficult of observation, are followed as closely as possible. Elaborate investigations dealing with large masses of data, and requiring a large force of computers, can only be undertaken by richly endowed observatories or by those which receive government assistance. The Lick Observatory makes the most of its natural advantages; and extended theoretical researches, which can be made as well in a city as at a fine observing station, do not form a part of our general plan.

As all the principal instruments of the

* Extract from the forthcoming report of the Director of the Lick Observatory to the President of the University of California, for the year ending Sept. 1, 1899.

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

of men of repute. Under the section dealing with sewage purification, there is no mention whatever of the work done by the Massachusetts Board of Health.

The appendix is voluminous and consists largely of extracts from previous papers published by the authors during the years 1866 to 1891.

W. P. MASON.

Laboratory Manual, Experiments to Illustrate the Elementary Principles of Chemistry. By H. W. HILLYER, PH.D., Assistant Professor of Organic Chemistry in the University of Wisconsin. New York, The Macmillan Company. 1899. Pp. vi+200. Price, 90 cents.

After a short chapter on manipulation, this manual is divided into two parts. Part I. is given to the preparation and properties of the elements and their compounds. The usual illustrative experiments are given, all of these being of a purely qualitative character. A few problems for calculation are, however, inserted. Part II. is devoted to the verification of quantitative laws, especially the laws of constant and multiple proportion, the laws of combination for gases, and vapor densities. Very much, of course, depends on the teacher, but there seems to be some danger that the work of many students with the first part of this book will degenerate into merely playing with chemicals. The old method of preparing stannic chloride given on page 144 might, with advantage, be replaced by that of Lorenz, (*Zeit. f. Anorg. Ch.* 10, 44.).

Inorganic Chemical Preparations. By FELIX LENGFELD, Assistant Professor of Inorganic Chemistry in the University of Chicago. New York, The Macmillan Company. 1899. Pp. xviii+57. Price, 60 cents.

The study of inorganic chemical preparations deserves a much larger place than has usually been assigned to the subject in chemical courses. The selection of topics in Dr. Lengfeld's book is excellent. Some of the directions are, perhaps, a little too concise for the use of students who have not had a good deal of laboratory experience. Without close watching many students would certainly fall into serious mistakes—but, then, a student often learns more from a mistake than by doing a thing right the first time.

W. A. NOYES.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *American Journal of Science* for November contains the following articles:

'Types of March Weather in the United States,' by O. L. Fassig.

'Some new Minerals from the Zinc Mines at Franklin, N. J., and Note concerning the Chemical Composition of Ganomalite,' by S. L. Penfield and C. H. Warren.

'Action of Acetylene on the Oxides of Copper,' by F. A. Gooch and DeF. Baldwin.

'Andesites of the Aroostook Volcanic Area of Maine,' by H. E. Gregory.

'New mode of occurrence of Ruby in North Carolina,' by J. W. Judd and W. E. Hidden. With Crystallographic Notes by J. H. Pratt.

The Osprey for October, makes its appearance under new editors and is a particularly good number, being very strong in interesting notes. The first article, 'The Home of a Pair of Wood Thrushes' is by R. W. Johnson; then follow 'The Butcher Bird in Florida,' by Mrs. M. A. Ohlinger; 'Peculiar Nesting of the Hooded Merganser,' by Glen Rinker; 'Robin Recitals and Variations,' by P. M. Silloway, and 'Nesting of the Bald Eagle,' by Wm. H. Fisher. The principal article, 'Wild Guinea-Fowl of Barbuda,' by Frederick A. Ober, is in that writer's best vein. L. A. Fuertes notes the occurrence of 'Two Rare Warblers at Ithaca.' In the correspondence Mr. J. Parker Norris replies to his critics in a letter on 'The Utility of Large Series of Eggs.'

Appleton's Popular Science Monthly, for November, contains a portrait and sketch of Dr. George M. Sternberg, Surgeon-General, U. S. A. The number also contains an article on Cambridge University by Mr. Herbert Stotesbury with portraits of Sir Michael Foster, Professors J. J. Thomson, G. H. Darwin, Henry Sidgwick and James Ward, Dr. Donald Macalister and Sir George Stokes. Other articles are on 'Wireless Telegraphy,' by Professor John Trowbridge; 'Emigrant Diamonds in America,' by Dr. Wm. H. Hobbs; 'On Spider Bites' and 'Kissing Bugs,' by Dr. L. O. Howard, and a review of Wallace's 'Wonderful Century,' by Professor W. K. Brooks.